C+

2019 Appoquinimink Watershed

Wetland Health Report Card

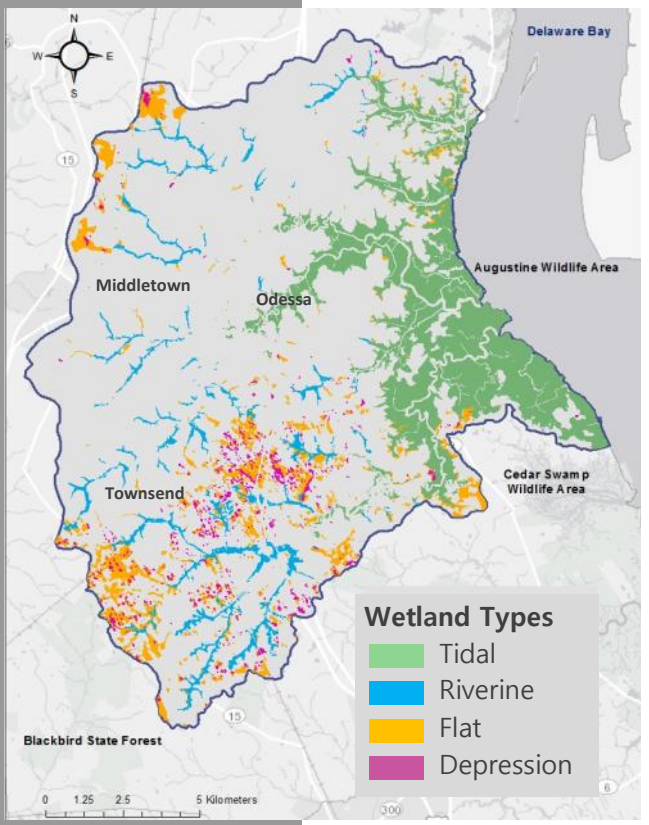
About the Watershed

The Appoquinimink River watershed is located within New Castle County and contains the Towns of Odessa, Middletown and Townsend. It drains into the Delaware Bay encompassing 58,591 acres of land. The landscape is dominated by agriculture, followed by wetlands and then development. With approximately 25% of the land area covered by wetlands, saltmarshes, also known as tidal wetlands, are the most common wetland type.

Wetlands have a rich history across the region and their beauty has become one of the symbols of Delaware. Unfortunately, many of the wetlands that remain are degraded, and not functioning at their fullest potential. Based on field data, wetlands in the Appoquinimink watershed received an overall condition grade of C+, indicating that these wetlands are among Delaware's wetlands that are in need of improvements through stewardship, conservation or restoration.

Jack in the pulpit flower.

How Are Wetlands Graded?



There are many different types of wetlands in Delaware, and to accurately grade their health, they are broken into two categories based on how they receive their water supply: tidal wetlands and non-tidal wetlands.

Tidal wetlands have water moving in and out of them in cycles based on the moon's gravitational pull (the tides), and the Mid-Atlantic Tidal Wetland Rapid Assessment Method (MidTRAM) is used to grade them. The tidal wetlands that are assessed are called estuarine, or saltwater wetlands. Non-tidal wetlands are all freshwater and include riverine, flat and depression wetlands. They receive their water from rain, snow and underground springs. The Delaware Rapid Assessment Procedure (DERAP) is used to grade them.

In both methods, biologists look for and tally living and non-living stressors (also called environmental indicators) that prevent a wetland from functioning properly. **Throughout the Appoquinimink River watershed, a total of 124 sites were assessed and graded in 2015 and 2016.**

Environmental Indicators of Wetland Health

A stand of Japanese stilt grass.

Wetland Habitat

Habitat indicators that cause a wetland's grade to decline include: forest harvesting, mowing, farming or grazing of the land, invasive species, and roads through the wetland.

The most common stressors to habitat in this watershed were the presence of invasive plant species such as Phragmites, Japanese stilt grass, and Japanese honeysuckle.

A ditch through a wetland.

Wetland Hydrology

Changes to water movement can cause a wetland's grade to decline. Indicators include: ditching, stream alterations, dams, stormwater inputs, and filling or excavation.

The most common stressors to hydrology in this watershed were ditching and manmade structures like docks or duck blinds.

In this aerial view, the wetland assessment area is represented by the green circle, and the buffer is represented by the yellow circle.

Buffer

A buffer is a zone of land just outside of the wetland that has the ability to protect a wetland from disturbances occurring in the surrounding upland landscape.

The most common stressors in the buffer area in this watershed were the presence of development, agricultural areas and roads.

Grade by Wetland Type

Habitat Hydrology Buffer

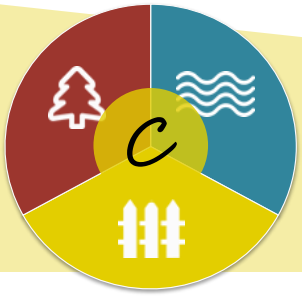
Wetland Health Scale:

Excellent Good Fair Poor Very Poor

Tidal Wetlands—Brackish or Salt

Tidal wetlands are regularly flooded by the tides, and are some of the most productive ecosystems on earth, supplying habitat for important fisheries. They provide protection for coastal populations by reducing flooding and storm damage.

Common Problems: *Invasive plants, sparse plants and unstable marsh, and a lack of continuous non-disturbed habitat in the buffer*



Riverine Wetlands

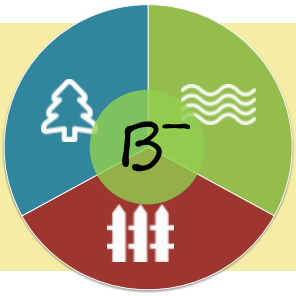
Riverine wetlands occur along streams or rivers and provide storage for floodwaters and groundwater. The water that moves into these wetlands is cleaned before it moves downstream. They form corridors of valuable wildlife habitat.

Common Problems: *Invasive plants, and agriculture, roads, mowed areas, and development in the buffer*

Flat Wetlands

Flat wetlands are typically located at the upper reaches of the watershed. They are seasonally wet and often appear dry on the surface. They absorb precipitation and filter water slowly into streams and groundwaters.

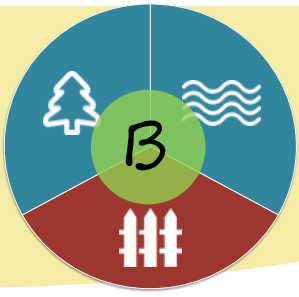
Common Problems: *Invasive plants, ditching, and development, roads, agriculture and mowing in the buffer*



Depression Wetlands

Depressions are isolated shallow pools of water that occur in low lying areas. They are seasonally wet and provide critical habitat for amphibians.

Common Problems: *Invasive plants, and development, roads, agriculture and forest harvesting in the buffer*



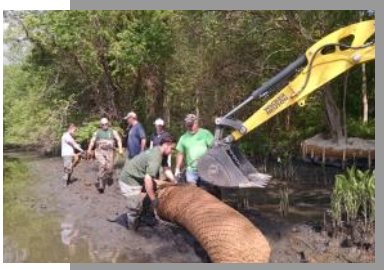
Did You Know?

You can find out if there are mapped wetlands near any Delaware address. Visit de.gov/wetlandtoolbox and enter your Delaware address to get started.

The Appoquinimink Watershed's Wetlands Need Your Help!

What you can do:

Managing invasive species on your property by removing and replacing them with Delaware natives. Allow native plants to grow and thrive alongside wetlands, rivers and streams for cleaner water and erosion protection. For a list of Delaware's invasive plant species please visit: *delawareinvasives.net*



Adding nature-based landscaping designs and green infrastructure on your property to control erosion and water runoff and improve water quality. Consider installing rain gardens or rain barrels in your yard, living shorelines in tidal areas, or planting trees in open areas. For more information on these practices and possible funding sources, please visit *de.gov/greeninfrastructureprimer*.

Protecting and maintaining buffers around your wetlands. Buffers are natural planted strips along wetlands that can help wetlands stay in good health. They trap sediments and excess nutrients and filter pollutants before they reach wetlands. For more information about buffers, please visit *de.gov/buffers*.

Preserving or restoring wetlands on your land. Approximately 75% of the wetlands in this watershed are privately owned. This means we need your help in maintaining and improving our wetlands and the natural benefits they provide. To find out about restoration options, please visit *de.gov/wetlandrestoration*.

Supporting better wetland protection by contacting your local decision makers. Activities in non-tidal wetlands are not regulated by the State of Delaware, and every additional wetland filled or destroyed leads to less clean water, fewer wildlife habitats, and less flood protection for us all. *de.gov/wetlandprotectionguidebook*

More Information

Please visit *de.gov/delawarewetlands* to view the entire report and learn more about the assessment methods.

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302-739-9939

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